Journal Strategy A: *What I Thought You Taught*

Using the *What I Thought You Taught* journal strategy, students list 8 to 12 key words, then write a synthesis that covers a math concept recently taught. For example, students recall:

Dividing fractions—divisible, least common denominator, working backward, quotient, divisor, dividend, bring down, remainder, repeating decimal, invert, denominator, numerator

Triangles—area, base, side, right, obtuse, acute, equilateral, isosceles, scalene, polygon, hypotenuse, line, vertex

It is critical that teachers model a *What I Thought You Taught* entry the first few times that they prompt students with the strategy. They should write the entry at their level of understanding, their vocabulary and their fluency of detailed thought of the concept. Therefore, a teacher's model will begin something like this…

> *I thought I was teaching you that triangles come in many shapes and sizes; each shape has a name and the overall size of the triangle doesn't affect the name. Triangles are one kind of polygon. They are planes (two-dimensional) with three lines that meet in three points on those lines. Each point is also the vertex of an interior angle. The size and configuration of the angles contribute to the name of the triangle. For instance, ...*

Notice that this teacher's model does not attempt to use all 13 key words as quickly as possible. The model explains each term as it unfolds.

What I thought you taught about _____ prompts students to analyze what they have recently studied and to synthesize that knowledge in their own words. The analysis is a jot list of key ideas that two or more students create first before attempting to write a complete synthesis. Rule: If there is no jot list, there is no complete and accurate synthesis. A synthesis is not a summary, so the word "summary" should not be used in prompting this response. Students explain what they understand about the terms that they use as they use each term.

Specify your expectations using the *Guide for Writing in Your Journal*

1. Write the prompt at the top of your journal page.
2. List words you will need to write an accurate and complete entry of what you were taught.
3. As you write a paragraph, explain each word you use from the list.
4. Let a peer read your entry. He/she will circle the words that you have used from the list.
5. ***My target expectation is 100 words / 6-8 sentences / 5-6 key words explained / a full page.***

Note: Let students know that it is better to elaborate on what they know about a few key words than to cram all key words into a 100-word paragraph just to get finished with the assignment.

Critical-thinking patterns promoted: analysis and synthesis

Journal Strategy B: *Acrostic Vocabulary*

Using the *Acrostic Vocabulary* journal strategy, students spell a major concept down the page to allow them to brainstorm and list facts about the concept that describe it fully and completely.

F– orms a part of the whole
R– educes to lowest terms
A– denominator is on the bottom
C– an never be a whole number
T– akes part in a mixed number
I– nverted and multiplied in division
O– rder of operations in the 2nd position
N– umerator is the number on top

N– ot a visible particle of matter
U– ncharge particles are neutrons
C– enter of the atom
L– iving and non-living organisms
E– lectrons move around it in fixed orbits
U– sed to determine atomic number
S– ubparticles that are positive are protons

Acrostic must be completed according to minimums set on this page. Practice the first few with the participation of the entire class. Then follow up an acrostic of a broad term like *G-E-O-M-E-T-R-Y* by letting students in pairs or small groups create acrostics on related concepts.

A-C-U-T-E (triangle), R-I-G-H-T (triangle), B-A-S-E-S (of triangles), S-I-D-E-S (of triangles), O-B-T-U-S-E (triangle), S-C-A-L-E-N-E (triangle), A-R-E-A-S (of triangles), A-N-G-L-E-S (of triangles),

Acrostic Vocabulary prompts students to analyze what they have recently studied and present the facts that come together to define that concept fully (concept attainment through inductive thinking). In addition, the students must consider several ways that they can state a fact before they list one of those ways.

Specify your expectations using the *Guide for Writing in Your Journal*

1. Write the assigned word down the page, one letter per line.
2. Write a fact on each line (four words or more) about your word, making sure the first word of the fact begins with the letter on that line.
3. Use only facts that are accurate and different from each other.
4. You may not use the word you are defining in the facts.
5. ***My target expectation is accurate facts for 5 of 7 letters / 8 of 11 letters / 10 of 15 letters.***

Reinforce the *Guidelines* with comments that help students reach your expectations.

- Write four to ten words per line.
- Facts must be distinctive to the concept. "L-arge or S-mall" does not fit for *island,* because it can apply to any landform.
- A fact can be used only once.
- The word being defined cannot be used in the fact.

Critical-thinking patterns promoted: inductive thinking and concept attainment

Students have benefited by responding to the following *Either...Or* questions. Divide these general prompts among teachers to keep fresh prompts in front of the students. The best *Either... Or* prompts are the ones that teachers base on daily learning objectives.

Attribute Questioned	Concrete	Abstract
1. harder	a slate floor	an algebra quiz
2. weaker	person in a wheelchair	a low math grade
3. more peaceful	taking a math test	the end of a war
4. more necessary	writing skills	kindness
5. smaller	sum of two numbers	unkind criticism
6. more dreaded	pop quiz	walking in the dark
7. more intimidating	Mr./Ms./Dr. (principal)	explaining steps to a solution
8. more overwhelming	an angry friend	a social studies project
9. more admired	U.S. President	successful lab experiment
10. more pleasing	home-cooked meal	making an "A" in science
11. stronger	strand of hair	gravity
12. darker	night	lack of knowledge
13. greater importance	facts of a person's birth	a person's deeds
14. easier to balance	a weekly schedule	algebraic equation
15. higher	Mt. Everest	an "A" in English
16. like a diary	constant video taping	American History journal
17. see truth better	scientists	artists
18. more deadly	loaded rifle	innumeracy

Critical-thinking patterns promoted: compare & contrast, main idea-supporting detail, concept attainment and problem solving

Journal Strategy E: *Quad Cluster*

Using the *Quad Cluster* journal strategy, students explain how one word in a cluster of four words is different from the other three *and* how the three that form a group are distinctive (four to six sentences).

sum ***quotient*** ***product*** ***divisor***

Divisor is the different word in this cluster. It is part of a division problem. It is the number that is divided into the dividend to solve for a quotient. So divisor actually refers to a number in the problem of a math operation. The other three words—***sum, quotient*** and ***product***—refer to the solution or answer to a math operation. ***Sum*** refers to the solution in the operation of addition, ***quotient*** the solution in division and ***product*** the solution in multiplication.

Note: Teachers may have one word in mind as the different one when in a *Quad Clusters*. But students satisfy the prompt when they justify their choice of a different word logically in 4-6 sentences.

Examples of quad clusters abound. Teachers may identify the odd term out for students with an asterisk or use the cluster as a way to assess students understanding of the logical relationships among related math terms.

Social Studies: Atlanta, New York, Los Angeles, Miami
Technology: CPU, monitor, mouse, keyboard
Language Arts: direct object, indirect object, subject, object of the prep.
FACS: pre-natal, neo-natal, infant, toddler
Industrial: DC, transformer, switch, conduit

The Quad Cluster strategy prompts students to analyze what they have recently studied and to conceptualize that knowledge in their own words. Students explain what they understand about the terms as they go.

Specify your expectations using the *Guide for Writing in Your Journal*

1. List the four words in the cluster at the top of your journal page.
2. Circle the one that is different from the other three.
3. Write two to three sentences explaining how the circled word is different.
4. Write two to three more sentences explaining how the other three words are alike.
5. ***My target expectation of 4-6 sentences includes 3 important facts that we have studied in class.***

Reinforce the *Guidelines* with comments that help students reach your expectations.

- Explain how one word is different from the other three as a group, not just how each of the words is different from each of the others.
- Explain how the three words that are alike differ from one another.
- Choose your words carefully. Don't try to write everything we have studied about these words/terms.

Critical-thinking patterns promoted: compare & contrast, main idea-supporting detail, concept attainment and standardized testing-taking skills